



UNITED STATES DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
NATIONAL MARINE FISHERIES SERVICE
Northwest Region
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Seattle, WA 98115-0070

Refer to:
OSB2001-0229-FEC

March 25, 2002

Shannon C. Stewart
Environmental Specialist
Bonneville Power Administration
P.O. Box 3621
Portland, Oregon 97208-3621

Re: Endangered Species Act Section 7 Formal Consultation and Magnuson-Stevens Act
Essential Fish Habitat Consultation for the Little Sheep Creek Large Wood Placement
and Culvert Replacement Project, Little Sheep Creek, Wallowa County, Oregon

Dear Ms. Stewart:

Enclosed is a biological opinion (Opinion) prepared by the National Marine Fisheries Service (NMFS) pursuant to section 7 of the Endangered Species Act (ESA) on the effects of the proposed Little Sheep Creek Large Wood Placement and Culvert Replacement Project in Wallowa County, Oregon. In this Opinion, NMFS has concluded that the proposed action is not likely to jeopardize the continued existence of ESA-listed Snake River (SR) steelhead (*Oncorhynchus mykiss*) and SR spring/summer chinook salmon (*O. tshawytscha*), or destroy or adversely modify designated critical habitat. As required by section 7 of the ESA, NMFS included reasonable and prudent measures with nondiscretionary terms and conditions that NMFS believes are necessary to minimize the impact of incidental take associated with this action.

This Opinion also serves as consultation on essential fish habitat (EFH) pursuant to section 305(b) of the Magnuson-Stevens Fishery Conservation and Management Act and implementing regulations at 50 CFR Part 600.

If you have any questions regarding this consultation, please contact Catherine Broyles of my staff in the Oregon Habitat at 541.975.1835 x223.

Sincerely,

D. Robert Lohn
Regional Administrator

cc: Allison Beck-Haas - United States Fish and Wildlife Service
Ken Benton - Oregon Department of Forestry
Don Bryson - Nez Perce Tribe
Wilfred Daggett - private land owner



Endangered Species Act - Section 7 Consultation
&
Magnuson-Stevens Act
Essential Fish Habitat Consultation

BIOLOGICAL OPINION

Little Sheep Creek Large Wood Placement and Culvert Replacement Project
Wallowa County, Oregon

Agency: Bonneville Power Administration

Consultation Conducted By: National Marine Fisheries Service,
Northwest Region

Date Issued: March 25, 2002

Issued by:



D. Robert Lohn
Regional Administrator

Refer to: OSB2001-0229-FEC

TABLE OF CONTENTS

1.	ENDANGERED SPECIES ACT	1
1.1	Background	1
1.2	Proposed Action	1
1.2.1	Culvert Replacement	2
1.2.2	Large Woody Debris Placement	4
1.3	Biological Information and Critical Habitat	4
1.4	Evaluating Proposed Actions	4
1.4.1	Biological Requirements	5
1.4.2	Environmental Baseline	6
1.5	Analysis of Effects	7
1.5.1	Effects of Proposed Action	7
1.5.2	Cumulative Effects	8
1.6	Conclusion	9
1.7	Conservation Recommendations	9
1.8	Reinitiation of Consultation	9
2.	INCIDENTAL TAKE STATEMENT	10
2.1	Amount or Extent of Take	10
2.2	Effect of Take	10
2.3	Reasonable and Prudent Measures	11
2.4	Terms and Conditions	11
3.	MAGNUSON-STEVENSON ACT	14
3.1	Background	14
3.2	Magnuson-Stevens Fishery Conservation and Management Act	14
3.3	Identification of EFH	15
3.4	Proposed Actions	15
3.5	Effects of Proposed Action	15
3.6	Conclusion	16
3.7	EFH Conservation Recommendations	16
3.8	Statutory Response Requirement	16
3.9	Consultation Renewal	16
4.	LITERATURE CITED	16

1. ENDANGERED SPECIES ACT

1.1 Background

On September 4, 2001, National Marine Fisheries Service (NMFS) received a letter dated August 29, 2001 with an attached biological assessment (BA), from the Bonneville Power Administration (BPA) requesting ESA section 7 formal consultation regarding the potential effects of replacing two culverts with bridges and the installation of large woody debris (LWD) in Little Sheep Creek on Snake River (SR) steelhead, SR spring/summer chinook salmon, and their designated critical habitat. In this letter, the BPA determined that the project was not likely to adversely affect (NLAA) SR steelhead or SR spring/summer chinook salmon. In a letter dated October 5, 2001, NMFS responded to the BPA with a letter stating we did not concur with the BPA's NLAA determination. In this letter, NMFS requested additional information describing the construction activities associated with the project. On December 7, 2001, Kevin Benton, Oregon Department of Forestry (ODF), responded with a letter detailing actions associated with the project and concluded that the proposed actions are likely to adversely affect (LAA) SR steelhead, SR chinook, and their critical habitat.

The action area includes 1.75 miles of Little Sheep Creek and is located at T3S, R46E, Sec. 20 and 29, at road mile 6 on Forest Service Road 39 near the town of Joseph, Oregon. Little Sheep Creek is a tributary to Big Sheep Creek which drains into the Imnaha River. The Imnaha River is a tributary to the Grande Ronde River in the Grande Ronde Basin. The Grande Ronde River is one of five principal rivers in the Snake River drainage that contributes to salmon and steelhead production.

The BPA has determined that SR steelhead and SR spring/summer chinook salmon may occur within the project area. The SR steelhead were listed as threatened on August 18, 1997 (62 FR 43937) and SR spring/summer chinook salmon were listed as threatened on April 22, 1992 (57 FR 14653). Protective regulations for SR steelhead were issued under section 4(d) of the ESA on July 10, 2000 (65 FR 42422). The proposed project is within critical habitat for SR spring/summer chinook, designated on December 28, 1993 (58 FR 68543), and that of SR steelhead, designated on February 16, 2000 (65 FR 7764).

This Opinion reflects the results of the consultation process. The purpose of this Opinion is to determine whether the actions of replacing two culverts with bridges and placing large pieces of wood in Little Sheep Creek in Wallowa County are likely to jeopardize the continued existence of SR steelhead, SR spring/summer chinook, or result in the destruction or adverse modification of their designated critical habitat.

1.2 Proposed Action

The BPA is proposing to fund the replacement of two culverts with bridges, fill a plunge pool with clean rocks and boulders located at the outlet of the lower culvert, remove 20 yards of streambed substrate to prevent the development of a headcut, and to place large pieces of wood

at fifteen different locations along Little Sheep Creek. The purpose of this project is to improve fish passage by replacing two culverts with bridges and to improve fish habitat through the addition of large wood. The project will be implemented on private land and was developed in coordination with the land owner, Grande Ronde Model Watershed, Oregon Department of Forestry (ODF), the Nez Perce Tribe, and the ODFW.

1.2.1 Culvert Replacement

Two nine-foot round corrugated culverts were installed on a private road in the early 1990's. The culverts are located at river miles (RM) 21.5 and 22.75. The culverts are installed at a 3% gradient and are incapable of passing 50-year peak flows. The lower culvert drops 1.5 feet at the outlet into a five foot deep scour pool. Juvenile fish are only able to pass through the culverts under certain flow regimes.

Prior to removing the culverts from the Little Sheep Creek, a dozer and an excavator will pull the existing road fill away from the stream. This will leave 90% of the culvert exposed. Road fill will be moved away from the stream and deposited either in a stable location outside high water level or re-used for abutment fill during abutment construction. Since this phase of the operation will be conducted from the existing road prism, there will be no need for equipment to operate within the active stream channel. This will limit the amount of sediment generated by construction activities.

Once the majority of the road fill is pulled away from the culvert, an excavator operating from the existing road will excavate the bridge abutment footings. The footings will be located outside of the bankfull width. The bridge abutment footings will be set approximately three feet below the streambed elevation. Since bridge abutments are located outside the normal bankfull width and the existing culvert will confine the stream course away from the area of construction, devices such as coffer dams will not be needed to ensure that wet concrete does not come in contact with the flowing stream. Once abutment footings are excavated and forms constructed, abutments will be poured and allowed to cure. The excavator and dozer will back fill and compact fill materials to reinforce the abutments. Abutment backfills will consist of 50 percent rock and 50 percent earth. This combination of materials will inhibit erosion during high flows. The area in which fill is placed will be armored with rip-rap 12" in size or larger. All heavy machinery will operate from the existing road fill and will not enter the active stream channel.

Once bridge abutments are constructed, removal of the existing culvert can proceed. An excavator, operating from an elevated position provided by the bridge abutments, will remove any residual road fill materials from the active channel, unseat, and vertically lift the existing culvert from its bed. The culvert will be placed at a stable location above high water for future use elsewhere. A sediment pulse is expected to occur during the unseating and lifting of the culverts. To minimize sedimentation to the water course from culvert removal operations, a filter fence consisting of either certified weed-free straw bales or filter fabric will be installed below the plunge pool. This device will span the width of the channel. Since equipment will

be operated from the abutments, the amount of turbidity that would be created by instream work will be minimized. In addition, this technique eliminates the need for channel dewatering or the diversion of the stream.

Before the new bridge is put into place, the thalweg at the deepest point of the plunge pool below the lower culvert will be filled half way with five cubic yards of clean boulders. The boulders will measure between 1.5 and 2.5 feet in diameter. If cobble/gravel material similar to the native streambed material is available, the pool will be filled an additional foot or two in depth with this type of material.

A 1.5 foot deep wedge, measuring 40 feet in length and 20 feet in width, will be excavated from the point at which the culvert currently resides. The deepest point of the wedge will be made directly beneath the culvert, tapering off upstream to the location of the inlet to a zero depth. If a high percentage of fine material (silt and sand in excess of 40% of the surface area) is exposed, an additional 6 to 12 inches will be excavated and filled with cobble similar in size to that of the native streambed material. The intent in doing this is to remove the existing 1.5 foot drop at the outlet of the culvert. This drop, if left in its current state, has the potential to facilitate the development of a headcut once the culvert is removed. Annual monitoring will be conducted by the ODF to determine if a headcut is developing. Certified weed-free straw bales and filter fabric will be used to minimize sedimentation into the water course as substrate is removed and added to the channel.

Once the culvert and residual road fills are removed, an excavator will be used to set the bridge stringers in place. Each bridge will consist of six 12' to 16' H-beam stringers attached to 12" concrete abutments. Pre-built pads measuring 8'x12' will be laid across the H-beams to form the deck of the bridge. Each section will be comprised of pressure treated wood planks measuring 3"x8" and guard rails measuring 6"x6". Road fill consisting of 50 percent rock and 50 percent earth will be laid across the deck pads to form the surface of the bridges. The bridge at the site of the lower culvert will be 28' long and 6.5' above the stream bed. The bridge at the site of the upper culvert will be 19' in length and 7' above the stream bed. The roads on each bridge will be 12' wide.

All work will be done during low water and within the ODFW inwater work window (July 15-October 15) for Little Sheep Creek. Removal and construction of each individual crossing structure will be complete before removal/construction operation on the next stream crossing begins. This will maintain access to both sides of the stream throughout construction thereby eliminating the need for a low water ford or the construction of a by pass road. After construction is completed, disturbed areas will be seeded with native grasses. The quick regeneration of plants will serve to thwart the invasion of noxious weeds.

1.2.2 Large Woody Debris Placement

A contractor will place fifteen pieces of large wood in the stream between RM 21.25 and 23.0. Placement of large wood will be in accordance with ODFW's recommendations as specified in the *Guide to Placing Large Wood in Streams*. Individual lengths will be a minimum of 1.5 times the bank full width at the point of installation with root wads attached or two times the bank full width at the point of installation without root wads. Individual pieces will be a minimum of 14 inches at diameter breast height (DBH) or larger dependent upon bank full width at placement location. The wood will be placed in the stream with a portion of the bole intertwined with existing trees or boulders to minimize movement during high flow events. The placement of LWD will increase the quality and frequency of pools, thereby improving juvenile rearing habitat.

1.3 Biological Information and Critical Habitat

The listing status and critical habitat designation of SR spring/summer run chinook salmon and SR steelhead are outlined in Section 1.4 of this Opinion. Biological information for SR steelhead is found in Busby et al. (1996) and that for SR spring/summer chinook in Mathews and Waples (1991) and is summarized in Myers et al. (1998).

The proposed actions discussed within this Opinion are within designated critical habitat for SR spring/summer chinook salmon and SR steelhead. Critical habitat for SR spring/summer chinook was designated on December 28, 1993 (58 FR 68543). Critical habitat for SR steelhead was designated on February 16, 2000 (65 FR 7764). Critical habitat for SR chinook salmon and steelhead encompasses the major Columbia River tributaries known to support this ESU, including the Salmon, Grande Ronde, Imnaha, Deschutes, John Day, Klickitat, Umatilla, Walla Walla, and Yakima Rivers, as well as the mainstem Columbia River and estuary. Critical habitat consists of all waterways below long-standing (more than 100 years duration) naturally-impassable barriers. The riparian zone adjacent to these waterways is also considered critical habitat. This zone is defined as the area that provides the following functions: Shade, sediment, nutrient/chemical regulation, stream bank stability, and input of LWD/organic matter.

Essential features of the adult spawning, juvenile rearing, and adult migratory habitat for the SR steelhead and chinook salmon are: 1) Substrate, 2) water quality, 3) water quantity, 4) water temperature, 5) water velocity, 6) cover/shelter, 7) food, 8) riparian vegetation, 9) space, and 10) safe passage conditions. The essential features that the project may affect are substrate, water quality, water temperature, cover/shelter, food, water velocity, and riparian vegetation.

1.4 Evaluating Proposed Actions

The standards for determining jeopardy are set forth in section 7(a)(2) of the ESA as defined by 50 CFR Part 402 (the consultation regulations). NMFS must determine whether the action is likely to jeopardize the listed species and/or whether the action is likely to destroy or adversely modify critical habitat. This analysis involves the initial steps of: 1) Defining the biological requirements and current status of the listed species, and 2) evaluating the relevance of the environmental baseline to the species' current status.

Subsequently, NMFS evaluates whether the action is likely to jeopardize the listed species by determining if the species can be expected to survive with an adequate potential for recovery. In making this determination, NMFS must consider the estimated level of mortality attributable to: 1) Collective effects of the proposed or continuing action, 2) the environmental baseline, and 3) any cumulative effects. This evaluation must take into account measures for survival and recovery specific to the listed salmonid's life stages that occur beyond the action area. If NMFS finds that the action is likely to jeopardize, NMFS must identify reasonable and prudent alternatives for the action.

Furthermore, NMFS evaluates whether the action, directly or indirectly, is likely to destroy or adversely modify the listed species' designated critical habitat. NMFS must determine whether habitat modifications appreciably diminish the value of critical habitat for both survival and recovery of the listed species. NMFS identifies those effects of the action that impair the function of any essential element of critical habitat. NMFS then considers whether such impairment appreciably diminishes the habitat's value for the species' survival and recovery. If NMFS concludes that the proposed action will destroy or adversely modify critical habitat it must identify any reasonable and prudent alternatives available.

For the proposed action, NMFS' analysis considers direct or indirect mortality of fish attributable to the action. NMFS' critical habitat analysis considers the extent to which the proposed action impairs the function of essential elements necessary for juvenile and adult migration, spawning, and rearing of the SR spring/summer chinook salmon and steelhead under the existing environmental baseline.

1.4.1. Biological Requirements

The first step NMFS uses for applying the ESA section 7(a)(2) to listed salmon and steelhead is to define the species' biological requirements that are most relevant. NMFS also considers the current status of the listed species taking into account population size, trends, distribution and genetic diversity. To assess the current status of the listed species, NMFS starts with the determinations made in its decision to list SR salmon and steelhead for ESA protection, and also considers new data available that is relevant to the determination.

The relevant biological requirements are those necessary for SR spring/summer chinook and SR steelhead to survive and recover to naturally reproducing population levels at which time protection under the ESA would become unnecessary. Adequate population levels must safeguard the genetic diversity of the listed stock, enhance their capacity to adapt to various environmental conditions, and allow them to become self-sustaining in the natural environment.

For this consultation, the biological requirements are improved habitat characteristics that function to support successful adult and juvenile migration, spawning and rearing. SR spring/summer chinook salmon and SR steelhead survival in the wild depends upon the proper function of certain ecosystem processes, including habitat formation and maintenance. Restoring functional habitats depends largely on allowing natural processes to increase their

ecological function, while at the same time removing adverse impact of current practices. In conducting an analysis of habitat altering actions and essential habitat elements, NMFS defines the biological requirements in terms of a concept called Properly Functioning Condition (PFC) and applies a “habitat approach” to its analysis (NMFS 1999).

1.4.2 Environmental Baseline

The current status of SR spring/summer chinook salmon ESU has improved somewhat since being listed as threatened in 1992. In 1994, the species was proposed for listing as endangered due to very low numbers of adults observed at Lower Granite Dam on the lower Snake River. However, an improvement in the adult return levels as seen in 1997 promoted the withdrawal of the proposed down listing in 1998. Recent returns show continuing improvements in adult returns, at least for some portions of the ESU. The counts at Lower Granite for spring/summer chinook were 14,320 in 1998, 6,556 in 1999, 37,755 in 2000, and 18,972 in 2001 (<http://www.nwp.usace.army.mil/op/fishdata/lwrgrant.htm>). Lower Granite Dam is located at RM 107.5 on the main stem of the Snake River approximately 70 miles downstream of the confluence with the Grande Ronde River with the Snake River.

The current range-wide status of the identified ESUs may be found in Busby et al. (1996) and Myers et al. (1998). The identified action will occur within the range of SR steelhead and SR spring/summer chinook. The defined action area is the area that is directly and indirectly affected by the proposed action. The direct effects occur at the project site and may extend upstream or downstream based on the potential for impairing fish passage, hydraulics, sediment and pollutant discharge, and the extent of riparian habitat modifications. Indirect affects may occur throughout the watershed, where actions described in this Opinion lead to additional activities, or affect ecological functions, contributing to stream degradation. As such, the action area for the proposed activities include the immediate portions of the watershed containing the project and those areas upstream and downstream that may reasonably be affected, temporarily or in the long term. For the purposes of this Opinion, the action area is defined as the 1.75 miles of Little Sheep Creek that will be directly impacted by the construction activities and the adjacent stream and riparian areas.

Little Sheep Creek begins in the Wallowa Mountains in the northeastern corner of Oregon at elevations over 8,000 feet and flows in a generally northeasterly direction for approximately 31 miles. It enters Big Sheep Creek from the left bank at RM 3.2 and at an elevation of 2,180 feet. The Little Sheep Creek Watershed is located in the U.S. Geological Survey hydrological unit 17060102, contains approximately 182 stream miles, and drains approximately 152 square miles. The lower 23 miles of Little Sheep Creek are on private land where it then enters the Wallowa-Whitman National Forest near Ferguson Creek. The uppermost portions of Little Sheep Creek are within the Eagle Cap Wilderness. The major land uses in this area are ranching and producing forest products.

The Wallowa Valley Improvement Canal removes water from the upper portions of Big Sheep Creek and transports it to the Wallowa Valley through a low divide. The canal’s capacity is

approximately 80 cubic feet per second (cfs). Three small hydroelectric projects that began operating in 1984, use water in the irrigation canal to produce power at three power plants. In 1993 and 1995, problems at the Little Sheep power plant caused all of the canal flow to be discharged down Little Sheep Creek, causing considerable damage to the channel and to the watershed. This, coupled with the Canal Fire, which burned over most of the upper portion of the Little Sheep Creek watershed in 1989, has reduced channel complexity and decreased bank stability. The small hydroelectric projects were decommissioned in 1997. A rain on snow event in January 1, 1997 contributed to the erosion of unstable streambanks and denuded the stream channel of woody debris.

Based on the best available information on the current status of SR steelhead range-wide, the population status, trends, and genetics; and the poor environmental baseline conditions within the action area, NMFS concludes that the biological requirements of the identified ESU within the action area are not currently being met. Numbers of steelhead are substantially below historic numbers. Recovery trends show no clear pattern due to lack of long-term data. Degraded freshwater habitat conditions, which include the effects of agricultural and residential use, have contributed to the decline. NMFS' Matrix of Pathways and Indicators (MPI) used the process described in the document, *Making ESA Determinations of Effect for Individual or Grouped Actions at the Watershed Scale* (NMFS 1996) to assess the current condition of various steelhead and salmon habitat parameters. Use of the MPI identified the following habitat indicators as either at risk or not properly functioning within the action area: Water temperatures, physical barriers, large woody debris, pool frequency, and streambank condition. Actions that do not maintain or restore properly functioning aquatic habitat conditions have the potential to jeopardize the continued existence of SR steelhead.

1.5 Analysis of Effects

1.5.1 Effects of Proposed Action

The effects determination in this Opinion was made using a method for evaluating current aquatic conditions, the environmental baseline, and predicting effects of actions on them (NMFS 1996). This The effects of proposed actions are expressed in terms of the expected effect (restore, maintain, or degrade) on aquatic habitat factors in the project area. For the proposed actions, all conditions in the Big Sheep Creek watershed will be maintained with the exception of habitat access, channel condition, and habitat elements. Indicators associated with both of these pathways will improve in the long term as a direct result of actions associated with the proposed project. These actions are outlined in detail in Section 1.2 of this Opinion. NMFS does anticipate some negative effects in the short term resulting from construction activities associated with the culvert removals, bridge construction, and large wood placement.

Impacts of the proposed project to stream habitat and fish populations can be separated into direct and indirect affects. Direct effects are those that contribute to the immediate loss or harm to individual fish or embryos (e.g., heavy equipment directly crushing a fish, crushing or

destabilizing a redd that results in the actual destruction of embryos, dislodging the embryos from the protective nest and ultimately destroying eggs).

Indirect effects are those impacts which occur at a later time, causing specific habitat features (e.g. undercut banks, sedimentation of spawning beds, loss of pools), localized reductions in habitat quality (e.g. sedimentation, loss of riparian vegetation, changes in channel stability and structure), and which ultimately cause loss or reduction of populations of fish, or reductions in habitat quantity and/or quality.

In the short term, the construction activity associated with the proposed project has the potential to directly harm juvenile fish or disturb rearing juveniles. Disturbance of riparian and instream habitat is expected and a temporary increase of sediment and turbidity is unavoidable. Increases in sediment and turbidity could reduce light penetration and inhibit primary production, abrade and clog fish gills, prevent feeding by sight feeders, stop migration, and cause any fish in the area to avoid the disturbed reaches of the creek. Increased sedimentation may result in minor siltation of downstream spawning gravels. Areas of the stream bank disturbed during construction will be revegetated, which will eventually restore function in those areas. Silt fences and straw bales will be used to limit the downstream movement of sediment generated by construction activities associated with the project. The effects of these activities on SR steelhead and SR spring/summer chinook and aquatic habitat factors will be limited by implementing construction methods and approaches that are included in project design intended to avoid or minimize impacts. All construction work will be done within the ODFW approved inwater work window.

In the long term, the bridges will provide natural bottom conditions for optimum fish passage, will pass 50 year flood events, and will provide optimum channel configuration for the movement of debris and bedload. The addition of large woody material will improve habitat diversity by increasing pool frequency and channel complexity. The planting of native grasses in disturbed areas will increase bank stability. Consequently, NMFS does not expect that the effects of this action will diminish the long-term value of the habitat for survival of SR steelhead and SR spring/summer chinook salmon.

1.5.2 Cumulative Effects

Cumulative effects are defined in 50 CFR 402.02 as "those effects of future State or private activities, not involving Federal activities, that are reasonably certain to occur within the action area of the Federal action subject to consultation." The action area is defined as the streambed and riparian habitat throughout the 1.75 miles of Little Sheep Creek where construction activities associated with the project will occur. The project actions consist of replacing two culverts with bridges and placing fifteen pieces of large wood in the stream channel. These activities are described in detail in the project description section above. NMFS is not aware of any significant change in non-Federal activities that are reasonably certain to occur within the action area. NMFS assumes that future private and State actions will continue at similar intensities as in recent years.

1.6 Conclusion

NMFS has determined that, when the effects of the subject actions addressed in this Opinion are added to the environmental baseline and cumulative effects occurring in the action area, they are not likely to jeopardize the continued existence of SR spring/summer chinook salmon or SR steelhead. Additionally, NMFS concludes that the subject actions would not cause adverse modification or destruction of designated critical habitat for SR spring/summer chinook salmon or SR steelhead. NMFS believes that the proposed action will cause some minor short-term increases in stream turbidity and sedimentation rates in Little Sheep Creek. The actions will improve fish passage; improve the condition of riparian vegetation, stream shading, substrate embeddedness, and streambank stability; and improve instream habitat by increasing the amount of LWD in the channel and increase pool frequency and quality in the long term in Little Sheep Creek. The short-term negative impacts due to stream substrate and bank modification impacts causing sedimentation in Little Sheep Creek, will be offset in the long term by improvements in the above mentioned habitat parameters.

1.7 Conservation Recommendations

Section 7 (a)(1) of the ESA directs Federal agencies to utilize their authorities to further the purposes of the ESA by carrying out conservation programs for the benefit of the threatened and endangered species. Conservation recommendations are discretionary measures suggested to minimize or avoid adverse effects of proposed actions on listed species, to minimize or avoid adverse modification of critical habitat, or to develop additional information. NMFS has no additional conservation recommendations regarding the action addressed in this Opinion.

1.8 Reinitiation of Consultation

Consultation must be reinitiated if: 1) The amount or extent of taking specified in the Incidental Take Statement is exceeded, or is expected to be exceeded, 2) new information reveals effects of the action may affect listed species in a way not previously considered, 3) the action is modified in a way that causes an effect on listed species that was not previously considered, or 4) a new species is listed or critical habitat is designated that may be affected by the action (50 CFR 402.16). To reinitiate consultation, BPA must contact the Habitat Conservation Division (Oregon Habitat Branch) of NMFS, and refer to OSB2001-0229-FEC.

2. INCIDENTAL TAKE STATEMENT

Sections 4(d) and 9 of the ESA prohibit any taking (harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, collect, or attempt to engage in any such conduct) of listed species without a specific permit or exemption. Harm in the definition of take in the Act means an act which actually kills or injures fish or wildlife. Such an act may include significant habitat modification or degradation which actually kills or injures fish or wildlife by significantly impairing essential behavioral patterns, including, breeding, spawning, rearing, migrating, feeding or sheltering (64FR60727 November 8, 1999). Harass is defined as actions that create

the likelihood of injuring listed species to such an extent as to significantly alter normal behavior patterns which include, but are not limited to, breeding, feeding, and sheltering. Incidental take is take of listed species that results from, but is not the purpose of, the Federal agency or the applicant carrying out an otherwise lawful activity. Under the terms of section 7(b)(4) and section 7(o)(2), taking that is incidental to, and not intended as part of, the agency action is not considered prohibited taking provided that such taking is in compliance with the terms and conditions of this incidental take statement. An incidental take statement specifies the impact of any incidental taking of endangered or threatened species. It also provides reasonable and prudent measures that are necessary to minimize impacts and sets forth terms and conditions with which the action agency must comply in order to implement the reasonable and prudent measures.

2.1 Amount or Extent of Take

NMFS anticipates that the proposed action is reasonably certain to result in the incidental take of listed species in this Opinion because of detrimental effects from increased sediment levels (non-lethal) and the potential for incidental take during inwater work (lethal and non-lethal). Effects of actions such as these are not expected to have a long-term effects on SR spring/summer chinook salmon and SR steelhead habitat or population levels. Based on the information in the BA, NMFS anticipates that a minor amount of incidental take (up to ten juvenile SR steelhead and/or spring/summer chinook salmon) could occur as a result of the actions covered by this Opinion. If this threshold is exceeded, consultation must be reinitiated. The extent of the take is limited to the 1.75 miles of Little Sheep Creek directly impacted by the activities associated with the project, to include associated stream and riparian areas.

2.2 Effect of Take

In this Opinion, NMFS has determined that the level of anticipated take is not likely to jeopardize SR steelhead, SR spring/summer chinook, or to destroy or adversely modify designated critical habitat when the reasonable and prudent measures are implemented.

2.3 Reasonable and Prudent Measures

NMFS believes that the following reasonable and prudent measures are necessary and appropriate to minimize take of SR steelhead and SR spring/summer chinook resulting from the action covered in this Opinion. The BPA shall:

1. Minimize the likelihood of incidental take resulting from inwater work required to complete the project addressed in this Opinion.

2. Minimize the amount and extent of incidental take from construction activities in or near watercourses by ensuring that an effective spill prevention, containment, and control plan is developed, implemented, and maintained to avoid or minimize point-source pollution both into and within watercourses over the short term and the long term.
3. Minimize the likelihood of incidental take and impacts to critical habitat resulting from riparian area disturbances including removal of vegetation and disturbance of soils and sediments.
4. Complete a comprehensive monitoring and reporting program to ensure the conservation measures prescribed in this Opinion are implemented and effective.

2.4 Terms and Conditions

In order to be exempt from the prohibitions of section 7 of the ESA, the BPA must comply with the following terms and conditions, which will implement the reasonable and prudent measures described above. These terms and conditions shall be incorporated into construction contracts and subcontracts to ensure that the work is carried out in the manner prescribed.

Implementation of the terms and conditions within this Opinion will further reduce the risk of impacts to fish habitat. These terms and conditions are non-discretionary.

1. To implement Reasonable and Prudent Measure #1, the BPA shall ensure that:
 - a. Project Design. The following overall project design conditions are met.
 - i. Minimum area. Construction impacts will be confined to the minimum area necessary to complete the project. As much work as possible will be completed during low flow periods.
 - ii. In-water work. All work within the active channel will be completed within the ODFW approved inwater work period for this area, July 15 through October 15. Extensions of the in-water work period, including those for work outside the wetted perimeter or the stream but below the ordinary high water mark, must be approved by biologists from NMFS.
2. To implement Reasonable and Prudent Measure #2, the BPA shall ensure that:
 - a. Isolation of inwater work area. The work area will be well isolated from the active flowing stream to minimize the potential for sediment delivery. Sediment levels will be monitored to ensure compliance with state water quality standards. All project operations, except efforts to minimize sedimentation, will cease if sediment levels exceed state water quality standards.
 - b. Pollution and erosion control plan. A Pollution and Erosion Control Plan (PECP) will be developed and implemented to prevent point-source pollution

related to construction operations. The PECP will contain the pertinent elements listed below and meet requirements of all applicable laws and regulations:

- i. Methods that will be used to prevent erosion and sedimentation associated with access roads, stream crossings, construction sites, equipment and material storage sites, fueling operations and staging areas.
- ii. Methods that will be used to confine and remove and dispose of excess concrete, cement, and other mortars or bonding agents, including measures for washout facilities.
- iii. A description of the hazardous products or materials that will be used, including inventory, storage, handling, and monitoring.
- iv. Measures that will be taken to prevent construction debris from falling into any aquatic habitat. Any material that falls into a stream during construction operations will be removed in a manner that has a minimum impact on the streambed and water quality.
- v. Equipment that is used for work shall be cleaned prior to entering the job site. External oil and grease shall be removed, along with dirt and mud. Untreated wash and rinse water will not be discharged into construction area without adequate treatment. Areas for fuel storage and servicing of construction equipment and vehicles will be located at least 300 feet away from any body of water.
- vi. The contractor shall develop and implement a site-specific spill prevention, containment, and control plan (SPCCP) that includes notification procedures, and is responsible for containment and removal of any toxins released. The contractor will be monitored by the BPA to ensure compliance with the SPCCP.
- vii. The person identified as the Erosion and Pollutant Control Manager (EPCM) shall also be responsible for the management of the contractors' SPCCP. In the event of a hazardous materials or petrochemicals spill, the EPCM shall be responsible for:
 - (1) Taking immediate action shall be taken to recover toxic materials from further impacting aquatic or riparian resources.
 - (2) Documenting a detailed description of the quantity, type, source, reason for the spill, and actions taken to recover materials.
 - (3) Notifying necessary state officials.
 - (4) All refueling of equipment will take place 300 feet from any body of water and auxiliary fuel tanks will not be stored on bridges, roads or within the two-year flood plain.
 - (5) All machinery will be inspected for leaks prior to on-site use. Problems will be corrected prior to their use within the riparian zone.

3. To implement reasonable and prudent measure #3, the BPA shall ensure that:

- a. Construction activities will be done in a way which minimizes disturbance of existing riparian vegetation. Alteration of native vegetation will be minimized. Where disturbance is necessary, native vegetation will be clipped by hand where feasible so that roots remain intact. In all areas that require removal or involve mortality of riparian vegetation, reseeding and/or replanting of vegetation with native species will occur.
 - b. Existing vegetation conditions shall be monitored.
 - c. Immediately implement revegetation procedures to replace any functional riparian components dying because of construction. Only native vegetation will be replanted. Soil erosion control fabric will be used in conjunction with seeding to reduce sedimentation releases for the disturbed areas.
 - d. The success of planting within, and adjacent to, the construction area is monitored. The BPA will supply a monitoring report to NMFS that shall include before and after photos of the planting in the project area. The monitoring of any new planting should be done annually following construction up to and including the fifth year.
 - e. Failed planting will be replaced yearly, for a period of five years.
4. To implement reasonable and prudent measure #4, the BPA will ensure that:
- a. If a dead, injured, or sick endangered or threatened species specimen is located, initial notification must be made to the National Marine Fishery Service Law Enforcement Office, located at Vancouver Field Office, 600 Maritime, Suite 130, Vancouver, Washington 98661 or call 360.418.4246. Care should be taken in handling sick or injured specimens to ensure effective treatment and care or the handling of dead specimens to preserve biological material in the best possible state for later analysis of cause of death. In conjunction with the care of sick or injured endangered and threatened species or preservation of biological materials from a dead animal, the finder has the responsibility to carry out instructions provided by Law Enforcement to ensure that evidence intrinsic to the specimen is not unnecessarily disturbed. Within 1 year of completing the project, submit a monitoring report to NMFS describing the BPAs' success in meeting these terms and conditions.
 - b. Monitoring reports should be submitted to:

National Marine Fisheries Service
Oregon Habitat Branch
Attn: OSB2001-0198
525 NE Oregon Street, Suite 500
Portland, Oregon 97232-2778

3. MAGNUSON-STEVENSON ACT

3.1 Background

The objective of the essential fish habitat (EFH) consultation is to determine whether the proposed action may adversely affect designated EFH for relevant species, and to recommend conservation measures to avoid, minimize, or otherwise offset potential adverse effects to EFH resulting from the proposed action.

3.2 Magnuson-Stevens Fishery Conservation and Management Act

The Magnuson-Stevens Fishery Conservation and Management Act (MSA), as amended by the Sustainable Fisheries Act of 1996 (Public Law 104-297), requires the inclusion of EFH descriptions in Federal fishery management plans. In addition, the MSA requires Federal agencies to consult with NMFS on activities that may adversely affect EFH.

EFH means those waters and substrate necessary to fish for spawning, breeding, feeding, or growth to maturity (MSA §3). For the purpose of interpreting the definition of essential fish habitat: Waters include aquatic areas and their associated physical, chemical, and biological properties that are used by fish and may include aquatic areas historically used by fish where appropriate; substrate includes sediment, hard bottom, structures underlying the waters, and associated biological communities; necessary means the habitat required to support a sustainable fishery and the managed species' contribution to a healthy ecosystem; and “spawning, breeding, feeding, or growth to maturity” covers a species' full life cycle (50 CFR 600.110).

Section 305(b) of the MSA (16 U.S.C. 1855(b)) requires that:

- Federal agencies must consult with NMFS on all actions, or proposed actions, authorized, funded, or undertaken by the agency, that may adversely affect EFH.
- NMFS shall provide conservation recommendations for any Federal or State activity that may adversely affect EFH.
- Federal agencies shall within 30 days after receiving conservation recommendations from NMFS provide a detailed response in writing to NMFS regarding the conservation recommendations. The response shall include a description of measures proposed by the agency for avoiding, mitigating, or offsetting the impact of the activity on EFH. In the case of a response that is inconsistent with the conservation recommendations of NMFS, the Federal agency shall explain its reasons for not following the recommendations.

The MSA requires consultation for all actions that may adversely affect EFH, and does not distinguish between actions within EFH and actions outside EFH. Any reasonable attempt to encourage the conservation of EFH must take into account actions that occur outside EFH, such

as upstream and up slope activities, that may have an adverse effect on EFH. Therefore, EFH consultation with NMFS is required by Federal agencies undertaking, permitting or funding activities that may adversely affect EFH, regardless of its location.

3.3 Identification of EFH

The Pacific Fisheries Management Council (PFMC) has designated EFH for federally-managed fisheries within the waters of Washington, Oregon, and California. The PFMC has designated EFH for three species of Pacific salmon: chinook (*Oncorhynchus tshawytscha*), coho (*O. kisutch*), and Puget Sound pink salmon (*O. gorbuscha*)(PFMC 1999). Freshwater EFH for Pacific salmon includes all those streams, lakes, ponds, wetlands, and other water bodies currently, or historically accessible to salmon in Washington, Oregon, Idaho, and California, except areas upstream of certain impassable man-made barriers (as identified by the PFMC), and longstanding, naturally-impassable barriers (i.e., natural waterfalls in existence for several hundred years). In estuaries and marine areas, designated salmon EFH extends from the near shore and tidal submerged environments within state territorial waters out to the full extent of the exclusive economic zone (370.4 km) offshore of Washington, Oregon, and California north of Point Conception to the Canadian border. Detailed descriptions and identifications of EFH for salmon are found in Appendix A to Amendment 14 to the Pacific Coast Salmon Plan (PFMC 1999). Assessment of potential adverse effects to these species' EFH from the proposed action is based on this information.

3.4 Proposed Actions

The proposed actions are detailed above in section 1.1. The action area includes the 1.75 miles of Little Sheep Creek that will be directly impacted by the construction activities as well as adjacent stream and riparian areas. This area has been designated as EFH for various life stages of chinook salmon.

3.5 Effects of Proposed Action

As described in detail in ESA portion of this consultation, the proposed activities may result in detrimental short-term adverse effects to a variety of habitat parameters.

3.6 Conclusion

NMFS believes that the proposed action may adversely affect the EFH for chinook salmon.

3.7 EFH Conservation Recommendations

Pursuant to section 305(b)(4)(A) of the Magnuson-Stevens Act, NMFS is required to provide EFH conservation recommendations for any Federal or state agency action that would adversely affect EFH. The conservation measures proposed for the project by the BPA, all of the Reasonable and Prudent Measures and the Terms and Conditions contained in Sections 2.2 and 2.3 are applicable to salmon EFH. Therefore, NMFS incorporates each of those measures here as EFH conservation recommendations.

3.8 Statutory Response Requirement

Please note that the Magnuson-Stevens Act (section 305(b)) and 50 CFR 600.920(j) requires the BPA to provide a written response to NMFS after receiving EFH conservation recommendations within 30 days of its receipt of this letter. This response must include a description of measures proposed by the agency to avoid, minimize, mitigate or offset the adverse impacts of the activity on EFH. If the response is inconsistent with NMFS' conservation recommendations, the BPA must explain its reasons for not following the recommendation.

3.9 Consultation Renewal

The BPA must reinitiate EFH consultation with NMFS if either action is substantially revised or new information becomes available that affects the basis for NMFS' EFH conservation recommendations (50 CFR 600.920).

4. LITERATURE CITED

Section 7(a)(2) of the ESA requires biological opinions to be based on "the best scientific and commercial data available." This section identifies the data used in developing this Opinion.

Busby, P., T. Wainwright, G.J. Bryant, L.J. Liehr, R.S. Waples, F.W. Waknitz, and I.V. Lagomarsino. 1996. Status Review of West Coast Steelhead from Washington, Idaho, Oregon, and California. NOAA Technical Memorandum NMFS-NWRSC-27. August, 261p.

DEQ 1999. DEQ's 1998 303d List of Water Quality Limited Streams & Oregon's Criteria Used for Listing Waterbodies. Oregon Department of Environmental Quality (DEQ), Portland, Or 1999. (www.deq.state.or.us/wq/303dlist/303dpage.htm).

Matthews, G.M., and R.S. Waples, 1991. Status review for SR Spring and Summer Chinook Salmon. US. Department of Commerce, NOAA Technical Memo. NMFS

Myers, J.M., R.G. Kope, G.J. Bryant, D. Teel, L.J. Liehr, T.C. Wainwright, W.S. Grant, F.W. Waknitz, K. Neely, S.T. Lindley, and R.S. Waples, 1998. Status Review of

Chinook Salmon from Washington, Idaho, Oregon, and California. U.S. Department of Commerce, NOAA Technical Memo. NMFS-NWFWC-35, 443 p.

NMFS (National Marine Fisheries Service) 1996. Making Endangered Species Act determinations of effect for individual and grouped actions at the watershed scale. Habitat Conservation Program, Portland, Oregon. September 4, 1996.

NMFS. National Marine Fisheries Service 1999. The Habitat Approach: Implementation of Section 7 of the Endangered Species Act fo Actions Affecting the Habitat of Pacific Anadromous Salmonids. Guidance memorandum from Assistant Regional Administrators for Habitat Conservation and Protected Resources to staff. 3 pages. August. (Available @ www.nwr.noaa.gov , under Habitat Conservation Division, Habitat Guidance Documents.

PFMC (Pacific Fishery Management Council). 1999. Amendment 14 to the Pacific Coast Salmon Plan. Appendix A: Description and Identification of Essential Fish Habitat, Adverse Impacts and Recommended Conservation Measures for Salmon. Portland, Oregon.